

Lesson 7-6

Objective – To determine when to use a sample to represent a population.

Population – the entire group that is the target of a survey.

Sample – a small part of a population.

ASB wants to know what theme to use for the next 8th grade dance.

Population : 700 8th graders

Sample : Survey 30 students in girl's PE

Random Sample : Survey 30 8th graders chosen at random by computer.

State whether using a sample is necessary or appropriate.

1) You want to know if your closest friends like ice cream or snow cones.

Population is small – no sample necessary.

2) You want to know if the entire 6th grade class prefers pop music or classic rock.

Population is large – sample is appropriate.

3) You want to know what the most popular movie is playing right now amongst adults.

Population is large – sample is appropriate.

State whether using a sample is necessary or appropriate.

4) You want to know if your neighbors want popcorn at the block party.

Population is small – no sample necessary.

5) You want to know if the democratic party supports a certain candidate.

Population is large – sample is appropriate.

6) You want to know what toy will be the most popular during the holidays.

Population is large – sample is appropriate.

35% of all adults in Mission Viejo like horror movies. Kevin surveys 80 adults and 27 like horror movies. Compare Jeb's sample with the city percentage.

<u>City</u>	<u>Kevin's Sample</u>
35%	$\frac{27}{80} = 0.3375 \approx 34\%$

They are relatively close.

Mrs. Margo predicts that students will break 2% of her calculators each year. Last year 12 of her 160 students broke calculators. Was her prediction accurate?

<u>Prediction</u>	<u>Actual</u>
2% broken	$\frac{12}{160} = 0.075 \approx 7.5\%$ broken

No, her prediction was too low.

Jeff expects the hours that 7th graders in his school spend on video games each night to be about 1.2 hours. Is his random sampling below accurate?

2.0	0	2.0	1.0	0	4.0	3.5
2.5	2.5	2.0	1.0	2.5	3.0	0

$$\text{Mean} = \frac{\text{sum}}{\#} = \frac{26}{14} \approx 1.86 \text{ hours}$$

No, his expectations were too low.